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Vierra Magen Marcus LLP
575 Market Street, Suite 3750
San Francisco, CA 94105

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WU, TONG E

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JAMES G. JUDKINS and RICHARD W. O'CONNOR

Appeal 2015-007326
Application 12/893,946
Technology Center 3700

Before JENNIFER D. BAHR, LINDA E. HORNER, and BRANDON J. WARNER, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

James G. Judkins and Richard W. O'Connor (Appellants)[1] seek our review under 35 U.S.C. § 134 of the Examiner's decision rejecting claims 1–10 and 12–14, as set forth in the Final Action dated August 15, 2014 ("Final Act.").[2] We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] Appellants identify Spinal Modulation, Inc. as the real party in interest. Appeal Br. 3.

[2] Claim 16 is canceled, and claims 11, 15, and 17–21 are withdrawn from consideration. *Id.* at 27–29 (Claims App.).

CLAIMED SUBJECT MATTER

Appellants' claimed subject matter relates to devices "that are used to communicate with pulse generators that are used to treat pain or other conditions." Spec., para. 2. Of those claims before us on appeal, claim 1 is the sole independent claim and is reproduced below.

> 1. A handheld external programmer adapted to wirelessly communicate with an implantable pulse generator (IPG) implanted within a patient or an external pulse generator attached to the patient,
>
> the programmer having a predetermined intended orientation that specifies how a person should handhold the programmer so that the person can view and interact with a user interface associated with a front surface of the programmer in a predetermined intended manner,
>
> wherein when the person handholds the programmer in its predetermined intended orientation, the front surface of the housing is positioned at any angle between and inclusive of the front surface facing upward parallel to the earth's surface and the front surface facing sideways perpendicular to the earth's surface, which enables the person to view and interact with the user interface of the programmer in the predetermined intended manner,
>
> the external programmer comprising:
>
> a ground plane;
>
> a power supply;
>
> a telemetry transceiver powered by the power supply and grounded by the ground plane; and
>
> only a single antenna electrically connected to the telemetry transceiver; wherein the single antenna is positioned relative to the ground plane such that when the person handholds the programmer in its predetermined intended orientation a single radiation pattern produced by

> the antenna has substantially maximum radio frequency (RF) radiation generally directed toward the patient, regardless whether the person that handholds the programmer in its predetermined intended orientation is the patient or another person located near and generally facing the patient, and without requiring the programmer be placed over the pulse generator.

REJECTIONS

The Final Action includes the following grounds of rejection:

1. Claims 1–6 and 12–14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Goedeke (US 6,167,312, iss. Dec. 26, 2000) and Flint (US 2003/0222823 A1, pub. Dec. 4, 2003).
2. Claims 7–10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Goedeke, Flint, and Schommer (US 2005/0075692 A1, pub. Apr. 7, 2005).

ANALYSIS

First Ground of Rejection: Obviousness based on Goedeke and Flint

Independent claim 1 calls for "only a single antenna . . . positioned relative to the ground plane such that when the person handholds the programmer in its predetermined intended orientation a single radiation pattern produced by the antenna has substantially maximum radio frequency (RF) radiation generally directed toward the patient." Appeal Br. 24 (Claims App.).

The Examiner found that Goedeke discloses a handheld programmer, substantially as claimed, including "an antenna electrically connected to the

telemetry transceiver (Figures 1A, 2), wherein the antenna is positioned such that when a person handholds the programmer in its predetermined intended orientation, a radiation pattern produced by the antenna has substantially maximum RF radiation generally directed toward the patient." Final Act. 4–5; *see also id.* at 5 (the Examiner explaining that "Goedeke discloses improving or optimizing the antenna radiation, and the orthogonal configuration of the antennas cover multiple planes of radiation patterns"). The Examiner acknowledged that "Goedeke does not explicitly disclose a ground plane with the antennas." *Id.* at 5. However, the Examiner found that "Flint teaches antennas on portable computing devices with a ground plane (Paragraphs 42, 45), the antennas in various configurations (Figures 1–6) relative to the ground plane, in order to optimize the signal quality." *Id.* The Examiner determined that "it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Goedeke as taught by Flint to include a ground plane with antennas as recited, in order to optimize the signal quality." *Id.*

The Examiner further explained that, although "Goedeke discloses three antennas within the housing, Goedeke also teaches that the signal quality of the antennas can be monitored, and explicitly shows that a single antenna receiving the best signal is selected." *Id.* (citing Goedeke, abstract; col. 4, ll. 19–33). According to the Examiner, Goedeke's "additional antennas advantageously offer more flexibility and robustness in signal reception, with the drawback of consuming more power and space," and "[t]herefore, the decision to employ only a single antenna (i.e. the elimination of additional antenna elements with the subsequent loss of

function) would have been considered a matter of obvious design choice." *Id.* at 5–6.

Appellants argue, *inter alia*, that the Examiner's proposed modification to use a single antenna would not have been obvious because Goedeke and Flint teach away from using a single antenna, as called for in claim 1. Appeal Br. 19–20; Reply Br. 4. In particular, Appellants assert that "a significant portion of Goedeke focuses on why it is superior to include an array of multiple antennas, and why at least two of the multiple antennas should be orthogonal to one another" (Appeal Br. 19), and "Flint teaches improving wireless RF communication by including two or four antennas in a laptop" (*id.* at 20). According to Appellants, "the prior art extols the benefits and virtues of utilizing multiple antennas." Reply Br. 4; *see also id.* (asserting that "the prior art did not simply mention that its devices include multiple antennas," but, "[r]ather, the prior art went to great lengths to explain the superiority of its multiple antenna arrangements"). For the reasons that follow, we agree with Appellants that the Examiner's proposed modification of the multi-antenna programmer based on the teachings of Goedeke and Flint to include only a single antenna is not supported by adequate reasoning with rational underpinning. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Goedeke is directed to a programmer having "improved antenna configurations . . . optimized to allow for reliable communication between an implanted device and an external programmer or monitor which may be spaced at least several feet from one another." Goedeke, col. 1, ll. 60–64.

Goedeke discloses "a spatial diversity antenna array in order to facilitate reception of signals from the implanted device and transmission of signals to the implanted device, within a wide area surrounding the monitor or programmer." *Id.*, col. 2, ll. 2–5. "Antennas **12** and **13** may be, for example, monopole antennas located relative to one another such that their major axes are generally orthogonal to one another, with removably mounted antenna **14** preferably having its major axis generally orthogonal to antenna **13** when mounted to the housing **11**." *Id.*, col. 3, ll. 24–29. Goedeke discloses that, "during receipt of transmissions from the associated implanted device, the controller **46** may select which of the three antennas is employed as a function of the amplitude of the received RF signal." *Id.*, col. 4, ll. 23–26. In other words, Goedeke discloses improving wireless communication between a programmer and an implanted medical device by using an array of orthogonally-positioned antennae in the programmer, and selecting the antenna with the strongest RF signal.

Flint "is directed to dual-band antennas that are embedded within portable devices such as laptop computers." Flint, para. 12. As correctly noted by Appellants, "[i]n each of the embodiments described with reference to FIGS. 3–6 and 14, Flint . . . teaches the inclusion of at least two antennas (in the embodiment of FIG. 14 there are four antennas)." Appeal Br. 11 (emphasis omitted). Flint also discloses that "[t]he use of two antennas (as opposed to one antenna) will reduce the blockage caused by the display in some directions and provide space diversity to the wireless communication system." Flint, para. 5. In other words, Flint discloses benefits of using two

antennae for wireless communication (i.e., reducing blockage and providing space diversity).

Given that Goedeke and Flint specifically disclose the use of multiple antennae arrangements to improve wireless communication, the Examiner's reasoning articulated in support of the conclusion of obviousness is not based on rational underpinnings. Namely, the Examiner has not adequately explained why one of ordinary skill in the art would have been led, as a matter of design choice, to modify the multi-antenna programmer based on the combined teachings of Goedeke and Flint to include only a single antenna, as called for in claim 1. Accordingly, we do not sustain the rejection of claim 1, and of dependent claims 2–6 and 12–14, under 35 U.S.C. § 103(a) as unpatentable over Goedeke and Flint.

Second Ground of Rejection: Obviousness based on Goedeke, Flint, and Schommer

The rejection of claims 7–10 relies upon the same proposed modification to the combined teachings of Goedeke and Flint that we found deficient in the analysis of claim 1 discussed *supra*. *See* Final Act. 6–7. The Examiner did not rely on any disclosure of Schommer, or articulate any additional reasoning, that would remedy this deficiency. Accordingly, we do not sustain the rejection of claims 7–10 under 35 U.S.C. § 103(a) as unpatentable over Goedeke, Flint, and Schommer.

DECISION

The decision of the Examiner to reject claims 1–10 and 12–14 is REVERSED.

REVERSED